

CLAIMS

1 1. An adjustable joint for fixing a pair of members in a chosen positional
2 relationship, comprising:

3 a pair of knuckles, each attached to one of said members, each knuckle having
4 an internally splined central hole;

5 a cylindrical pin formed with axially extending splines adapted to be inserted
6 through said internally splined holes of the two knuckles; and

7 means for locking the pin in the holes to thereby fix the positional relationship
8 of the two knuckles and their attached members.

1 2. The adjustable joint of claim 1 wherein each knuckle is attached to one
2 of said members by means of a splined connection comprising a cylindrical member
3 having axially extending splines and a hole having internal splines, the cylindrical
4 member being adapted to be inserted into the hole in such a way as to rotationally
5 adjust the position of the knuckle relative to the member about the central axis of the
6 cylindrical member, whereby the rotational position of each member relative to its
7 knuckle may be adjusted and the rotational position of the knuckles may be adjusted
8 relative to one another.

1 3. The adjustable joint of claim 1 wherein each knuckle has a planar face
2 and its internally splined central hole is formed about an axis substantially

3 perpendicular to the planar face, whereby the means for locking the pin in the two
4 holes forces the planar faces of the two knuckles into abutment with one another.

1 4. The adjustable joint of claim 3 wherein at least one of the internally
2 splined central holes which is formed substantially perpendicular to the planar face of
3 its knuckle is slightly angled with respect to the said planar face so that the action of
4 locking the pin in the holes stresses the pin.

1 5. The adjustable joint of claim 1 wherein the internally splined central
2 holes in the two knuckles are formed with different numbers of splines, the two
3 numbers not having a common denominator, and the cylindrical pin has a head end, a
4 first cylindrical splined section of larger diameter joined to the head end, and a
5 second cylindrical section of smaller diameter joined to the end of the first cylindrical
6 section, the two cylindrical sections being formed with splines of different numbers,
7 corresponding to the numbers of splines in the first and second splined central holes
8 of the knuckles, whereby the rotational position of the knuckles may be adjusted to a
9 resolution which represents a multiple of the two spline counts.

1 6. The adjustable joint of claim 5 wherein the angular relationship
2 between the central hole in each of the knuckles and the center line of the splined
3 connection between the knuckle and its associated member deviates from the

4 perpendicular, whereby upon locking the pin in the two members both the splined
5 connection between the knuckles and their associated members and the pin
6 connection between the two knuckles are stressed.

1 7. An adjustable position support stand for an article, comprising:
2 a pair of elongated links;
3 a base for securing a first end of the first of said links to a supporting
4 structure;
5 means for fixing said article to a first end of the second of said links; and
6 an adjustable joint for fixing the second ends of each of the pair of links to one
7 another in a chosen positional relationship, said joint comprising:
8 a pair of knuckles, each attached to one of said links, each knuckle
9 having an internally splined central hole;
10 a cylindrical pin formed with axially extending splines adapted to be
11 inserted through the internally splined holes of the two knuckles; and
12 means for locking the pin in the holes to thereby fix the positional
13 relationship of the two knuckles and their attached links.

1 8. The adjustable joint of claim 7 wherein each knuckle has a planar face
2 and the internally splined central hole of each knuckle is formed about an axis
3 substantially perpendicular to the planar face, whereby said means for locking the pin

4 in the holes to thereby fix the positional relationship of the two knuckles and their
5 attached links forces said two planar faces of the two knuckles into engagement with
6 one another.

1 9. The adjustable joint of claim 8 wherein at least one of the internally
2 splined central holes in a knuckle is formed at an angle that deviates slightly from the
3 perpendicular to the planar face, whereby said means for locking the pins in the holes
4 to thereby fix the positional relationship of the two knuckles and their attached links,
5 bringing the planar faces into abutment with one another, prestresses the cylindrical
6 pin.

1 10. The adjustable joint of claim 7 wherein the central holes formed in the
2 two knuckles have different diameters and the splines formed in the central holes
3 have a different spline count, without a common denominator to the two spline
4 counts, and the cylindrical pin comprises a head, a first large diameter section
5 extending from the head, and a second smaller diameter section extending from the
6 end of the first cylindrical section, the pin being adapted to pass through the central
7 hole in the knuckle having the larger internal central hole and then through the central
8 hole in the knuckle having the smaller central hole, and the two cylindrical sections of
9 the pin having spline counts which correspond with the spline counts of the central
10 holes in which they fit.